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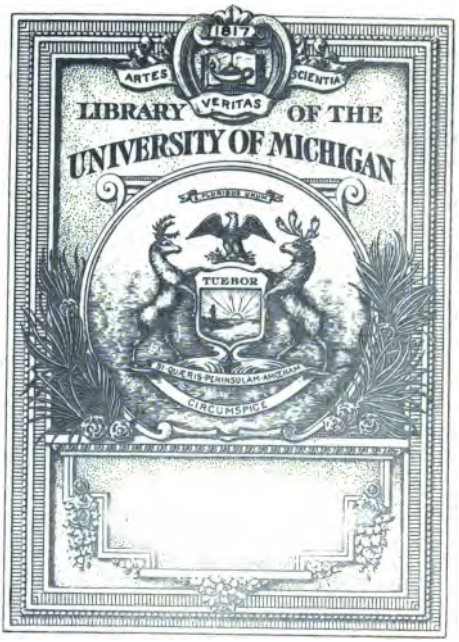

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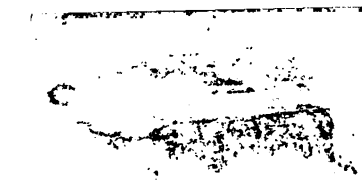

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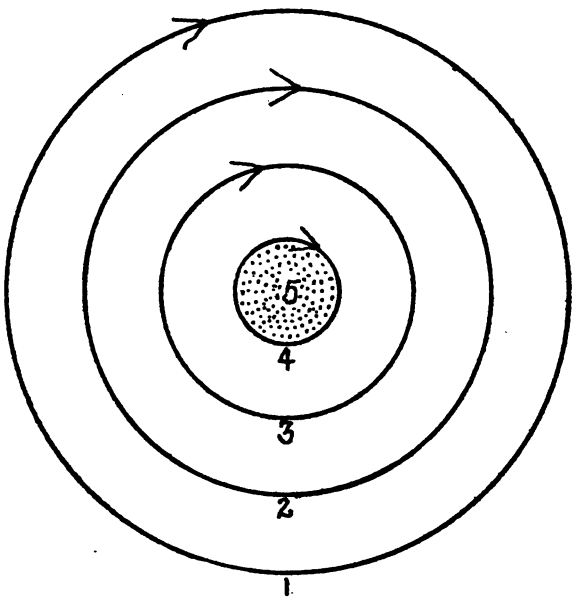

A Concept of the Ether.

(See page 38.)

MATTER

AND

SOME OF ITS DIMENSIONS

"The sciences progress to the limit of the senses, but there they must stop unless they intend to investigate more than the senses can teach"

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MATTER AND SOME OF ITS DIMENSIONS.

ESTIMATED by its results, the French Revolution was one of the most important epochs in history, since it destroyed feudalism and the privilege of blood. In eliminating one devouring force, however, it ushered in another, modern capitalism, which metamorphoses men into machines, destroys their bodies, and enslaves their imaginations and their souls.

The aspect of the Western world, especially in America, and east of the Mississippi river, has been wholly changed within the last twenty-five years. Men of ability and ambitions no longer find the farms an outlet for their energies, and the drift of these to the cities has transformed the old American hearthstone into the radiator of the apartment house, with all that that implies. This change in the domestic condition has brought about a corresponding change in the intellectual complexion of the race.

Countless millions still find ineffable consolation in the sheltering arms of the old orthodox faiths. There are a few restless spirits, however, to whom

the ancient ideals no longer appeal, and they are casting about for new anchorages. This is evidenced by the unparalleled demand for non-orthodox religious and philosophical literature. Everything is read with avidity, from the Christian Science doctrines of Mrs. Eddy to the literature of the so-called "tricks" of the Indian fakirs. The inventive genius of man has been so stimulated that nothing seems impossible, and many now believe that the dream of ages will be realized in the production of some physical proof of a life beyond the grave.

However that may be, the revelations of modern science seem to demonstrate that not only is there no antagonism between religion and science, but that the latter may eventually do much towards elucidating this greatest of all problems.

Particularly is this true with reference to the electrical theory of matter, which seems to give a moral value to the intellectual perceptions of modern physicists. Though not yet elevated to the dignity of a universally accepted theory, it is no exaggeration to say that its advocates are to be found among the world's greatest thinkers, and that their numbers daily increase.

The content of the following pages is to be regarded in the light of an hypothesis only. The

facts have been culled from a variety of sources, and only those discussed which are well recognized in the scientific and philosophical worlds. Much time has been expended in marshaling these facts, but the writer feels that he will be more than repaid if, in the case of a single reader, he has dulled the edge of doubt or caused one sorrow to seem less real.

PART I.

From the earliest times men have pondered the great problem of their existence and their environment. Anaximander, the Greek philosopher, as early as the fifth century before Christ, in order to account for matter, was forced to postulate the existence of an all-pervading substance which, for want of a better name, men have in later days called the ether. To build up matter out of this all-pervading substance he was compelled to subdivide it into unit particles, and these unit, or ultimate particles he conceived to be fine precipitations of the ether within the ether itself. Thus his system was pre-eminently monistic, for with the ether and the precipitations within itself, or, in other words, with the ether alone, he felt that he was able to account for matter in all its aspects.* Intensely philosophic, still the Greek mind of that day was unprepared for a theory so advanced, and

* The reader must not fall into the error of believing that Anaximander's concept of the ether was that entertained at the present time. The modern concept was ushered in by Dalton, the great English chemist of the 18th century. Suffice it to say that Anaximander felt the necessity of postulating the existence of just one all-pervading substance to account for all phenomena, and that the revelations of modern laboratories tend to confirm the truth of his theory.

thus the dualism of Democritus, because more readily comprehended, gradually rose to ascendancy. This dualistic theory has maintained itself even to this day; it is a theory which accounts for matter by assuming the existence of the eternal indestructible atom vibrating in the all-pervading eternal ether—a theory which, in a measure, is elu-

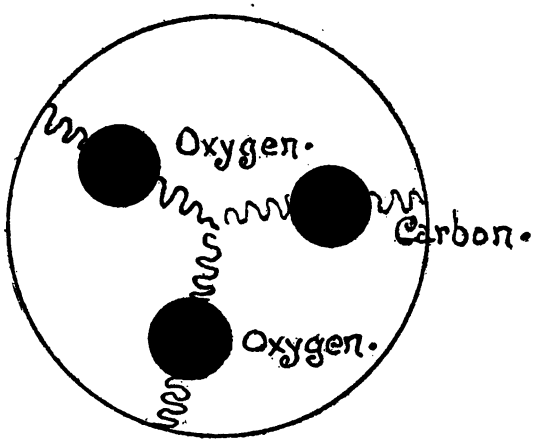


FIG. 1.—A MOLECULE OF CARBONIC ACID GAS: OLD CONCEPT.

cidated by the diagram, Fig. 1. Here is presented a molecule of carbonic acid gas. It is composed, as you observe, of two atoms of oxygen and one of carbon. Now, only by comparison can we arrive at any possible conception of the size of a molecule.

The smallest object that can be seen distinctly by the human eye at a distance of ten inches is 1/250 of an inch in diameter. The resolving power of a good microscope being about 1/50,000 of an inch, little trouble is experienced in observing an object so minute as the spores of the anthrax bacillus, which are 1/24,000 of an inch in diameter. Under favorable circumstances we can see the exquisite tracings on diatoms 30,000 of which are required to make an inch. But the molecule is a very different matter. Though no human eye has ever beheld a molecule, yet experiments and indirect measurements have been made which give us a fairly accurate idea as to its size and weight. One of the smallest infusoria known is the *Monas Dallingeri,* which is about 1/6,000 of an inch in diameter. Each of its spores is an independent living organism, not larger than 1/60,000 of an inch, and yet contains 268 millions of molecules. But, small as they are, they are veritable giants in relation to the atoms, for the molecule may, and often does, contain many hundred atoms. In the molecule of carbonic acid gas, however, we have only three atoms, and this material has been selected for our purpose because it is one of the simplest of all the many compound bodies. The zigzag lines represent a rapid vibratory motion of

the atoms from the center of the molecule to the periphery, and in addition to this there is a motion of translation of the atoms around the center of gravity of the system. They are depicted, as you will observe, as solid spheres, in accord with the universally accepted opinion that they are the unit bricks or ultimate particles of which the universe of matter is constructed; that they are homogeneous, eternal, indestructible, and can not be further cut or divided. This opinion almost universally obtains today, and any suggestion of the necessity for a change in belief would be received with scant courtesy, even though it emanated from a man of reputation. Still, men of prescience long ago felt that the atom, after all, might not be so simple a body.

In 1809 Sir Humphry Davy, at the Royal Institution, speculated on the existence of some substance common to all the metals, and in 1875 Prof. W. K. Clifford, than whom no grander soul ever lived, said: "There is every reason to believe that the material atom carries upon itself a small electric current, if indeed it does not wholly consist of this current." Faraday again, in 1848, believed that the young men of his time would live to see the homogeneous atom regarded as a very complex body. Finally, Prof. J. J. Thompson, in

1885, in a noteworthy address, gave us mathematical data which enabled us to say that if the quantity of electricity usually associated with a hydrogen monad atom was consolidated on a spherical nucleus 1/100,000 of the diameter of the atom, that the mass of the nucleus would be 1/1,000 of that of the atom. Here at once experiment and

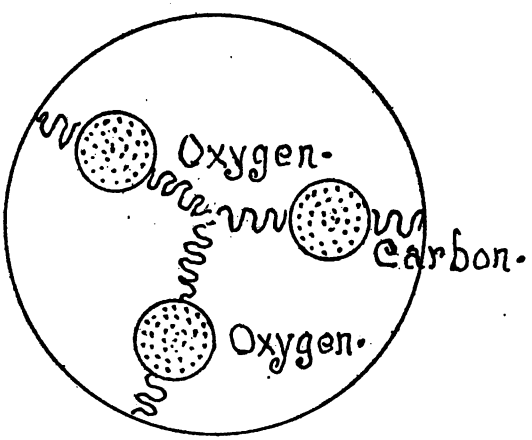


FIG. 2.—A MOLECULE OF CARBONIC ACID GAS: MODERN CONCEPT.

mathematical reasoning began to confirm the prophecies of the men of a prior generation.

In Fig. 2 we have a diagram of the most modern concept of an atom. It is the same molecule of carbonic acid gas that we have seen before in Fig. 1, but the atom, instead of being pictured as a

solid, is filled with the spherical nucleii of J. J. Thompson. Now what are these spherical nucleii, or *electrons,* as they have been termed? To properly conceive of them we must resort to analogy. We are told that these electrons are infinitely small stresses, or strains, or vortices in the ether; but these terms convey nothing very definite to the mind. Place a mass of quivering jelly upon a table, plunge a knife into each side, and give the knives a twist in opposite directions. A strain, or stress, or torsion exists between the points of the knives, but in no sense can the stress, or torsion, be considered matter. Now move the stress around a central point in the mass of jelly, and a certain amount of bound jelly will be carried along with the stress, and the moving, bound jelly, because of the motion, will have weight, or mass, or inertia. Increase the speed of rotation of the stress, and the mass of the bound jelly will also be increased. In like manner we may conceive an exceedingly small vortex moving in the ether. This moving vortex, or electron, will carry along with it a certain amount of bound ether which will increase as the motion of the electron is accelerated. Thus it appears that mass, so called, is a function of speed, since the greater the motion of the electron the greater the amount of bound ether carried along

with it, and the greater the amount of bound ether the greater the mass or inertia. Electrons, then, are not matter in the ordinary sense of the word; that is, they do not possess mass other than that which they seem to possess by reason of their motion and their electric charge.

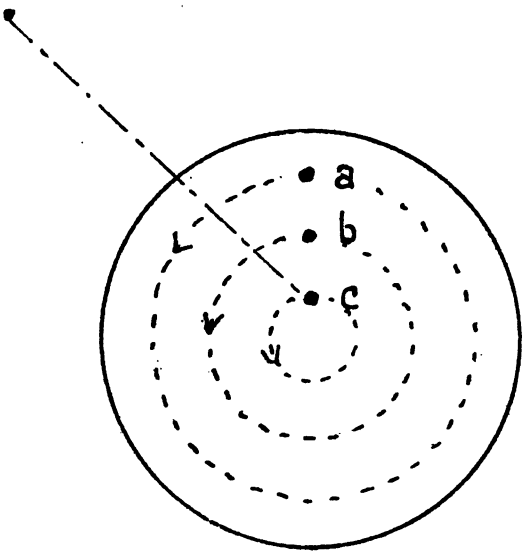


FIG. 3.—DISCHARGE OF AN ELECTRON.

Electrons are the bodies of the smallest masses known to science. They can be detected *only in motion*, and their *apparent* mass increases with their speed as they approach the velocity of light. In Fig. 3 we have shown three positions of an elec-

tron speeding around the center of gravity of the atom. As it moves through the ether it radiates its energy; as it radiates its energy it falls towards the center, and as it falls towards the center its velocity increases. This increase of motion brings about an increase of mass until, finally, when a velocity is attained comparable with that of light, as at c, the electron leaves the system traveling at the rate of 110 thousand miles per second.

Kaufmann's mathematical deductions enable us to say that when a body has attained a speed not greater than twenty per cent of that of light, its mass, hitherto represented by 1, has not materially altered; accurately it is 1.01. Increase the speed to one-half of that of light, and its mass is but slightly altered (1.11). Increase it to 99.9 per cent of that of light, and still there is relatively little change, for the mass has increased but sixfold; accurately 6.6. But just before the velocity of light is attained its mass would become infinite. Before this occurs, however, something would happen; the atom would begin to dissociate, the electrons leaving it with enormous velocity, and in the manner above described. The above statement, had it been made a few years ago, would have described only a theory held by a few very advanced physicists. Today the statement accurately de-

scribes the conditions obtaining in an atom of radium. In other words, the theory was evolved mathematically before the discovery of radium,

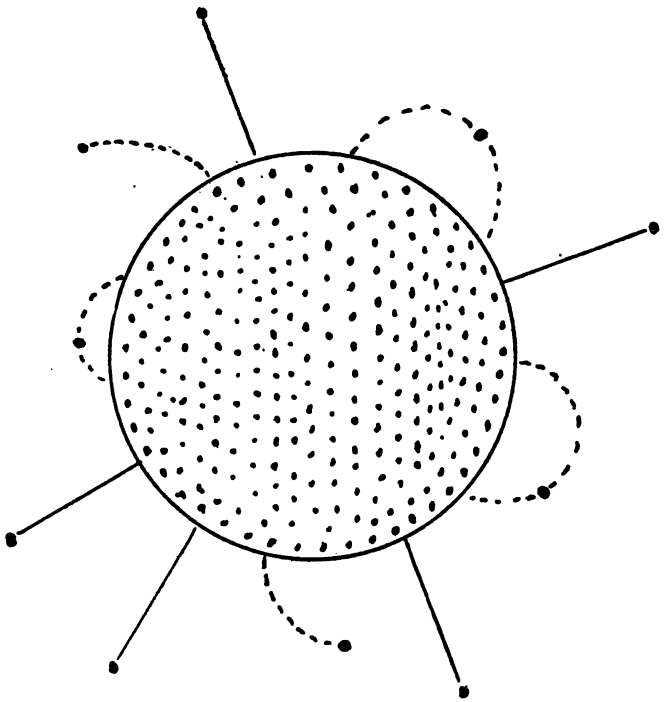


FIG. 4.—AN ATOM OF RADIUM.

which later confirmed it, and practically in every detail. In Fig. 4 we have the electrons revolving around the center of gravity of the system, and some are pictured as having attained a velocity

sufficiently great to bring about the dissociation of the atom. You will observe that several in their journey outward from the center of the atom have had a free and unobstructed path, and are leaving the system at a velocity of 110,000 miles per second. Others, on the contrary, have had their

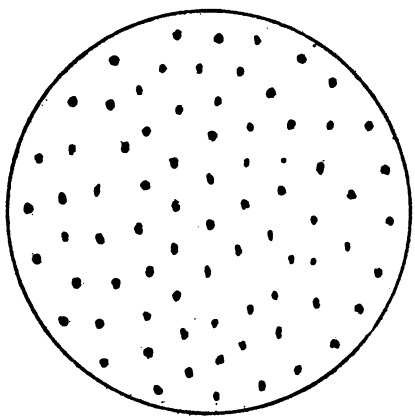


FIG. 5.—AN ATOM OF HYDROGEN.

momentum impaired by collision, and as a consequence are being drawn back into the system.

In Fig. 5 we have a diagram of an atom of hydrogen. It contains, let us say, 1,000 electrons, all whirling around the center of the system with velocities inconceivably great.

To get some idea of the dimensions of an electron, picture the interior of St. Peter's Church at

Rome filled with 1,000 grains of sand darting about in its vast interior. All is relative; there is no great, there is no small, and so we may say that the spaces between the electrons are relatively as great as the distances between the planets in our own solar system. If we take the weight of the hydrogen atom as 1, we may picture the interior filled with approximately 1,000 electrons. The atomic weight of carbon is 12; therefore its atom contains 12,000 electrons. Mercury has an atomic weight of 200, then its atom contains 200,000 electrons, etc., etc. What if all this should turn out to be true? Men have been dreaming about some such simple solution of the problem from the earliest times. Does one substance differ from another only in the number of electrons which its atom contains?

There is something here more stable than a hope, a dream, a guess, for the recent investigations of physicists lead us to believe that when the truth is found it will lie not far from what we have just been picturing. You have no doubt already asked yourself the question: What becomes of the hydrogen atom after it has lost an electron? Assuming the truth of what has been said, a substance whose atom contains 999 electrons can not have the same qualities as one whose atom contains 1,000. Is

one substance, then, through loss of electrons, being transformed into another? We can not reply definitely to this question, but we are justified in saying that all recent experiments tend to answer the question in the affirmative. Establish transmutation in the case of one element, and we have established it in all, since we can not conceive of any rupture of continuity in nature's processes. That transmutation *has* been established in the case of three or four elements will probably be admitted by the majority of scientists, but the reader must judge from what follows whether we are justified in saying that all substances are being slowly transmuted.

In Fig. 5 we have an atom of hydrogen gas, and have pictured it as filled with 1,000 electrons, which we must conceive as vortices in the ether, and possessing, among other things, *all the properties of negative electricity*. We call it also a neutral atom, because its electrical appetite appears to be perfectly satisfied. The electron theory has not accounted for positive electricity, has not enabled us to isolate a positive electron, but we seem justified in saying that if the atom is made up of electrons, or vortices of negative electricity, and the electrical appetite of the atom is satisfied, then this aggregation of electrons must be bounded by a sphere of positive electricity; but whether lying

without the atom or within the atom, this sphere must exactly balance the contained electrons. What this positive electricity is we do not know, nor have we isolated it, save in what we call "ions," which are really aggregations of electrons. Now, suppose an electron speeding at 110 thousand miles per second should come in contact with a neutral atom, the electron could either attach itself to the neutral

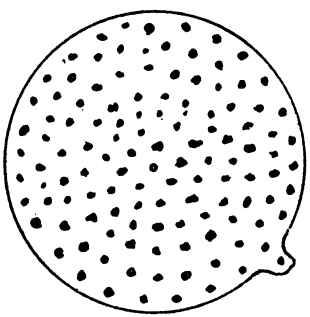


FIG. 6.—A NEGATIVE ION.

mass, or displace an electron from the system. In the former case we have, as the result, a negative ion, as in Fig. 6, and in the latter a positive ion, as in Fig. 7. The diagrams are meant simply to convey the idea that in one case there is a defect, and in the other an excess of electrons.

Now, bodies which emit electrons are known as radio-active. The radiations are of three kinds, and are distinguished by the three Greek letters

Alpha, Beta, Gamma. The beta radiations, or electrons, which we have just been considering are to be found not only in all radio-active substances, but in the Crookes' tube, and here they are known as the cathode rays. The alpha radiations are the positive ions, and are giants in comparison with the electrons, but on account of their size have very little penetrating power and relatively slow speed,

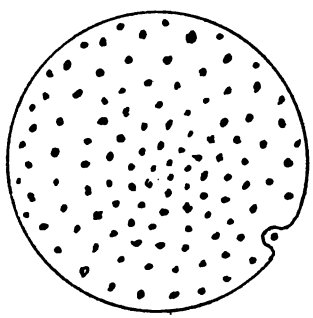


FIG. 7.—A POSITIVE ION.

only ten to twelve thousand miles per second. The electrons, on the other hand, as you will recall, have a velocity comparable with that of light, 110,000 miles per second. The gamma radiations are similar to the "X-rays," and move with the velocity of light. In addition to these three radiations, radio-active bodies emit an *emanation* which has many of the characteristics of a gas, since, for example, it can be confined in a glass tube, can be

condensed by liquid air at a temperature of—150 degrees, and yet, unlike matter, *at certain phases of its evolution it wholly disappears by transforming itself into electric particles.*

Here, then, we have established the fact that nature before our very eyes is constantly changing *the material into the immaterial* and *the ponderable into the imponderable.* Startling as it may seem, this emanation is both matter and not matter. It is ponderable and imponderable, and similar substances might enter into the construction of those bodies which, for want of a better name, St. Paul once described as "spiritual." The significance of this, however, will appear in the sequel. But to revert—substances emitting the above described radiations and emanations would, after a time, and, just as we should expect, undergo profound modifications. An atom of hydrogen consisting of 1,000 electrons would, at the loss of one, hardly retain the same characteristics as formerly, and so we find uranium changing into radium and radium into emanation and helium. Professor Rutherford has followed radium through the following marvelous changes. In the first column we find the names of the elements into which radium is successively transmuted, and in the second the life period of the elements:

Products.	*Period.*
Radium	1,300 years.
Emanation	3.8 days.
Radium A	3 minutes.
" B	26 minutes.
" C	19 minutes.
" D	40 years.
" E	6 days.
" F	143 days.

The results of Professor Ramsay's labors, however, are even more astonishing, since they appear to contradict the very fundamentals of modern science and open up to us worlds and possibilities undreamed. When the emanation of radium is brought into contact with water the former is transmuted into an elemental gas, neon. When brought into contact with water in which sulphate of copper has been dissolved, it changes into argon. But the changes in the water and in the solution of sulphate of copper are even more startling, for in the former we find an excess of hydrogen gas, say 18 to 20 per cent, and in the latter there are found traces of sodium and lithium. The sodium might result from the decomposition of the walls of the glass tube used in the experiment, but the presence of the lithium can be accounted for only on the supposition that there has been an actual transmutation of metals—a view

which, we have seen, opposes official classical teaching, and for this reason will be slow in obtaining a foothold, for in this changeful world the only changeless thing seems to be man's antagonism to new facts. Turning back to Rutherford's table, we find that the element Radium A has a life of 3 minutes, and that the element Radium F has a life of 143 days. Perhaps a very unscientific way of putting it; but is it because the latter supplies better conditions for a prolonged existence than the former? On this theory, iron and hydrogen would be considered very hardy elements. The environment supplied by the earth today is such that it causes but a slow dissociation of their atoms, whereas, in the case of radium, the environment is so unfavorable as to bring about a decay sufficiently rapid to be detected even by our crude instruments. If the idea of transmutation of metals is so repugnant to the orthodox, what is to be said of that vast store of energy locked up in the atom itself?—a result which must inevitably follow, provided our former assumptions are correct. For the past decade many of the most advanced physicists have been profoundly impressed by the fact that matter is a gigantic reservoir of energy. An English scientist recently stated that if one gram of radium could be instantly and com-

pletely dissociated, it would unlock sufficient energy to throw the whole of the British fleet from the Channel to the top of Mt. Blanc. To be more exact, let us take the lowest velocity at which the dissociated particles move in a Crookes' tube, say 10,000 kilometers per second, and, knowing the weight of the particle, an elementary calculation shows the amount of energy liberated. The work done by a moving body is equal to one-half the product of the mass by the square of the velocity. Using this formula, we find that one gram of matter instantly and completely dissociated would evolve 6,800,000 horse-power.

Rutherford says that the energy manifested in radio-active bodies is perhaps a million times greater than that produced by the various known reactions of molecular forces, and again "it seems probable that atomic energy is general, and of equal force in all bodies;" in other words, that in all matter there is locked up this enormous store of energy. This is so difficult to believe that Lord Kelvin himself may be pardoned for having denied it, though he knew that a gram of hydrogen gas by electrolysis sustained a charge of 96,000 coulombs of electricity, and that 1/20 of this amount sufficed to charge a globe as big as the world with 6,000 volts. Verily this was straining at a gnat and

swallowing a camel—to admit the latter and to deny the former. In justice to him, however, it should be said that just before his death he admitted the truth of Le Bon's position, viz: that matter is composed only of condensed energy of a special node, whence results its weight, its form, and its fixity—electricity being, therefore, only one of the manifestations of special energy contained in the atoms. Not the least marvelous property of matter is its mobility. Apparently stable, yet in reality infinitely more sensitive than the most delicately poised nervous organism. What more suggestive of inertness than a bar of steel, yet Professor Tyndall, by an ingenious arrangement of lever and mirror, has shown us the thrills and shivers of its molecules when the source of heat is not greater than that of the hand. Under the influence of the heat of the slightest finger touch the bar so lengthens that a beam of light falling upon its mirror attachment will be deflected thirty or forty degrees. If you wish to realize how mobile matter really is, place your hand near an air or mercury thermometer, and note the result. It requires no delicate instrument to convince you that it responds instantly to its environment. Here is a block of lead, for example, but, looking deeper into its nature, we see that it is a

special form of condensed energy; it represents a state of equilibrium between its own internal energy and the energies that surround it—heat, pressure, and the like. The slightest variation of heat and pressure brings about a corresponding variation in the block of lead, and that the element appears stable is due solely to the fact that its environment is stable. It must be borne in mind that a very slight relative change in temperature will wholly change the appearance of lead, first into a liquid, then into a gas, and with yet higher temperature into what? There appears to be but one answer to the question—back into the ether from which it sprang.

The sensibility of an organism is measured by its capacity to respond to stimulation. Probably no living creature will be affected by a change of environment equal to 1/10 of one degree Centigrade. Yet the rise or fall of 1/100,000 of one degree will occasion a profound molecular perturbation in the platinum wire of the bolometer. In common with the nervous systems of higher organisms, matter has a wonderful power of responding to electrical impulses, but, more marvelous still, according to Professor Bose, is its amenability to fatigue and its prompt yielding to the effects of exciting and depressing poisons. Just in

proportion as we try to get at the true inwardness of matter, so does our respect for it increase; and perhaps the time is not far distant when we shall cease to hear the term "brute matter." But, strange as it may appear, the scientist will probably be the last to divorce himself from the old preconceived opinion. There are, of course, many brilliant exceptions to this rule; but of all the attributes of the human mind, those which characterize the average orthodox scientist—the man who sees the world only through the medium of the microscope, the polariscope, the telescope, or the spectroscope—are the least attractive. In him, more than all others, is reflected the truth of the proposition that the degree of receptivity of men's minds to new facts is the only invariable thing we know. With him, scientific dogmas merit the same superstitious reverence as the gods of old; with him, what opposes classical teaching is wholly intolerable, and with a deprecating gesture and an appeal to common sense all unpleasant facts are relegated to the limbo of hopeless phantasms. To illustrate: In 1823 P. S. Girard, an eminent French engineer, an orthodox scientist and a man unusually assiduous in his devotions at the shrine of common sense, declared that it was a violation of that faculty to believe that all Paris, even to the fifth

floor of her residences, could be furnished with water.

Majendie knew surgical anæsthesia to be impossible. Dumas was convinced that the effort to separate the hæmoglobin of the blood was wasted effort. Pasteur, great as he was, believed that substances possessing asymmetric molecules could never be created by synthesis, and an appeal to common sense would have justified one twenty years ago in asserting that the transverse apophyses of the vertebræ would never be photographed (which with the X-rays now is an every-day occurrence). But an appeal to common sense is hazardous, since the standard of common sense is changing from day to day, and, at best, it is not an infallible guide, since it is but the opinion of the majority on familiar facts, who accept the facts simply because they are familiar, without in the least understanding them. It seems palpably false to say that the majority are always wrong until they come to accept the opinions of a very small minority, and yet this is self-evident, for truth first dawns upon the mind of some genius a century or two before his age, and then slowly and painfully through the succeeding years this truth is finding lodgment in the minds of the majority. Innumerable instances could be given, but two will suffice—

Ohm and Mayer. The former immortalized his name by the discovery of the laws which underlie the modern science of electricity. In a clever little book he describes the simple experiments that led him to formulate his great generalizations. Instead of verifying these experiments, well within the power of all teachers of that day, scientists denied them, and covered them with such ridicule that he lost his berth at his University, and, to avoid starvation, accepted a position in some minor institution at the munificent salary of $250 per annum. Mayer was decidedly the first in his field, and did more than any other man to raise the dogma of the conservation of energy to the dignity of a great natural law. His efforts were not only unsupported and unappreciated, but he was ridiculed, persecuted, neglected, and forgotten. So completely was his great work ignored that when Helmholtz, later and independently, made the same discovery, he was astonished to find that he had been anticipated by many years. Few realize that Helmholtz's work along these lines met with the same indifference, and that many reputable scientific papers of Germany refused to publish some of his most valuable contributions. The same attitude obtains today, and hence the theory that matter is a reservoir of force will have a

thorny path to travel. Assuming as true the proposition that matter is a reservoir of energy, and that the basis of matter is the electron, which is a stress or vortex in the ether, are we not justified in the assertion that we can not conceive of this gigantic stress without a personality of some kind exerting it, and hence that it is literally true that in the body or mind of some great Being all things do live, move, and have their being? Matter is solely a manifestation of force. Try to divorce "force" from its psychical significance. You can not do it, for men have always realized that force connotes a Conscious Will, a sustained, directing, intelligent effort, which even Schopenhauer would have called the Will of God, or the Soul of the Universe. "This," says the pragmatist, "smacks of mysticism;" but so at one time "free thinking" was of evil omen. All men are mystics save those to whom things are what they seem. Matter, then, is a projection from a spiritual plane, and since modern science tends to confirm that view, it must profoundly modify the conceptions of the religion and philosophy of the future, and give new life and hope to those who cling to the old-time views of the existence of a loving Father who holds all things in the hollow of His hand.

We have now reached a point in the develop-

ment of our study so difficult to grasp that some will probably turn back in despair—it is the point at which we must throw some kind of a bridge over the yawning chasm that separates the physical from the superphysical. In the material for the construction of such a bridge we can hardly expect to find convincing logic in abundance. On the contrary, the material must, to a greater or less extent, be composed of postulates which to a majority of minds will appear as self-evident truths. Such a truth the writer assumes is embodied in the proposition that behind the forces of the physical world there exists an absolute Will governed by an intelligence compassing all that is and is to be. Granted the postulate of an Intelligent Motor Power behind the movements in physical nature, we know that somewhere must be a locus in which that power is applied. Whether we have discovered and explored, or even touched, that region is a question which the reader must determine for himself. The value of the present study, if value it have, consists in this, that it has brought physical investigations to the point where a junction with the metaphysical province can be made without a strain upon probabilities, and where, in fact, many phenomena hitherto anomalous or inexplicable readily fall into line with the trend of the hypothe-

sis. Without further apology, then, we shall proceed to the description of some phases of mind and matter which suggest the existence of worlds and universes other than those acknowledged by the materialistic scientist.

PART II.

Let us again picture the universe filled with a perfectly transparent jelly-like mass which we will call the ether. Matter has not yet begun to appear, nor can it appear till the ether is differentiated. Is there any conceivable way in which ultimate particles may be formed in this apparently perfectly homogeneous substance? A resort to analogy will aid us materially. Imagine yourself imbedded in an absolutely transparent block of glass. Now conceive a strain, or stress, extending through the glass from side to side, and, as the result of this strain, the glass will be filled with exceedingly minute nodules, or points of fracture, which, of course, will be visible. Such a phenomenon would be striking in the extreme, and you would be tempted to exclaim: behold, Materialization! out of the Invisible comes the Visible! out of the unknown comes the known! we see the things coming forth from the things that do not appear. Now, suppose this strain were relaxed, the glass, by reason of its elasticity, would resume its former condition of transparency, and you would say: behold, Dematerialization! In some

such way all things in the universe could be maintained in the great mass of ether by the will or thought of an All-Sustainer, but let that Will even for a moment be relaxed, and all things would resolve into nothingness. Is it not now intelligible how matter might be simply a manifestation of force? Recall the block of glass, the strain and the result of the strain, the fine nodules, and hence matter suddenly appearing in the invisible glass. Or think of a tornado which has entity sufficient to be seen and felt, and yet is but a strain or stress in the invisible atmosphere. To strain the air requires the expenditure of energy, but to stress the ether immeasurably more energy is necessary, because the rigidity of the ether is almost immeasurably greater than that of the atmosphere. The following illustration by Professor Cooke will enable us to gain some idea of the rigidity and density of the ether. "The rapidity with which wave motion moves through any medium depends, other things being equal, upon the elasticity of the medium. Now conceive two media to be of the same density, their elasticities will be proportional to the squares of the velocities with which the motion moves. Sound travels at the rate of 1,100 feet per second; light, as wave motion in the ether, at 185,000 miles per second, or say 1,000,000 times

faster. Now suppose the ether were the same weight as the atmosphere, 1/3 of a grain to the cubic inch, its elasticity, or power of resisting pressure, would be, according to the rule, $1{,}000{,}000^2$ times greater. But as the capacity to resist pressure on the part of the air is fifteen pounds per square inch, that of the ether would be $1{,}000{,}000^2$ times 15, or 15,000,000,000 pounds. Such figures convey nothing to the mind save that of vast magnitude, but to bring it nearer within the grasp of the intellect let us take a syringe one inch in area, and imagine it ether-tight (such a supposition is an absurdity, but for the sake of argument let us conceive it as ether-tight), what weight on the head of the piston would be necessary to drive the confined ether down to the density of the air of any ordinary room? "One cubic mile of granite would hardly suffice, and yet the ether is so tenuous that the earth speeding around the sun at the rate of nearly nineteen miles per second suffers no perceptible retardation, though it has a density in proportion to its elasticity a million times a million greater than air." Now the mind is staggered by the effort to picture the power necessary to maintain a vortex motion (which may be likened to the fine nodule in the glass) in a substance so inconceivably rigid as the ether.

Yet an electron is but a vortex, and all substances are built up of electrons. One gram of hydrogen gas (15½ grains) means 6,800,000 horse-power stress in the ether. But mathematicians tell us that a perfectly homogeneous substance, such as we have supposed the ether to be, could not withstand such a pressure as a cubic mile of granite and retain the exceeding slight density that the theory demands. They calculate, however, that a structural ether would satisfy the requirements.* An ether made up of five other ethers of varying densities would, they assure us, be capable of withstanding such a pressure, and still retain the density which theory demands, viz: about that of the atmosphere, under normal conditions. So, instead of conceiving, as we have heretofore done, a universe filled with a perfectly homogeneous ether, we picture it as filled with five ethers of varying densities. A vortex motion in such a substance would assume the appearance suggested by the frontispiece. The ether whose particles are heaviest will revolve farthest from the center, as at 1; lighter particles would assume the position of

* The early, imperfect telescopes showed a plain ring around the planet Saturn. Mathematicians predicted what later and more perfect instruments revealed, viz., concentric rings, composed of particles of varying density—such were necessary to give the ring sufficient stability to maintain its form. Heterogeneity in a motion of this kind tends to stability.

ring 2, and the lightest would revolve nearest to the center of the system, as at 5. Ring 1 is the electron to which we have already been introduced, and from which all bodies are built up, and as this ring, or vortex, contains five rings of varying densities, we may say that every human body has the potentiality of other bodies, or existences, or forms, or dimensions. Every organ of the body, the brain, heart, leg, and arm, for example, have their exact counterparts in ethers 1, 2, 3, 4, and 5. This being true, we should expect that man, sometimes at least, would discover within himself traces of another personality, or intelligence; and so, indeed, he does, as will appear in the sequel. Now the outer ring, or the electrons of physical science, is the material plane; it is the three-dimension plane—it is the plane where conditions may best be described by the terms length, breadth, and thickness. But suppose that in some way a man could divorce himself from this outer ring, would he not stand forth on the plane of the second ring, the electron of the metaphysician? In casting off the outer ring he would eliminate only those characteristics of himself which might be described by the terms length, breadth, and thickness, obviously the least important part of himself. We never estimate a man's worth by the qualities which inhere in the physical electrons, for

only length, breadth, and thickness, and, as we shall see later, time and space, reside therein; and all of us unconsciously confirm this view of the matter when, as the portals of the mad-house swing open, or as the body is lowered into the grave, we recall of the beloved departed only those qualities which obtain in the second ring, or in the electron of the metaphysician. What is death, then, but the shedding of this outer ring, leaving its possessor on a different plane—leaving him with a body composed of finer ether, but unaltered in every other respect; leaving him with a body which St. Paul described as "spiritual," with a body which since it is composed of finer ether, might conceivably pass through substances composed of the coarser ether of the outer ring? For if tradition is to be believed, the spiritual body of the great Jewish Lawgiver passed through the walls of a room in which His disciples were breaking bread; and if recent reports are to be credited, in the seance rooms of modern times incidents have been recorded, under test conditions, which strikingly resemble those set forth in the sacred texts.

The foregoing suggests not only the concept of universes within universes, but it affords a physical basis for that faith which has dominated the learned of the East for countless generations—a faith the salient points of which have been briefly

set forth by a modern writer in the following language: "In each of the worlds through which man passes he is deluded by the spirit of that world, and lives in its illusions. From these he awakens only to pass through an analogous process in the world next beyond. Many worlds must be passed through, many illusions and delusions perceived and lived through before that conscious something which a man calls himself shall find itself in its native world, and learn to know itself in that world in a fuller degree than it now knows itself in this world. That conscious something which a man calls himself has an instrument, a physical body, which is of the matter and nature of the world in which he lives. For a man to live in the five worlds he must have as many bodies as there are worlds, each body being of the nature and matter of the world to which it belongs, that he may contact each world and have that world react in him."

Practically the same thoughts have filled the mind of the poet. Hear Stephen Philip, in "Herod":

"I tell you we are fooled by the eye and the ear,
These organs doth muffle us from the true world which lies about us,
The eye and the ear doth make us deaf and blind,
Else we should be aware of all our dead that pass above us, through us, and beneath us."

This conception of the ether as a heterogeneous instead of a homogeneous substance is destined to prove valuable even in the hands of the materialistic philosopher, as evidenced by the following quotation from the recent address of a gentleman of international reputation in the scientific world.

"The existence within our world of other worlds more tenuous than our own implies the existence within that of others more tenuous still, and within that another and another, on and on in endless evolution, the atom of one tenuity being ever the gateway to the next, a multiplex composed of finer atoms. So that what we call the ether is in reality an infinite reach of successive tenuities of substance."

The acquaintance of Jesus of Nazareth with the potentialities of the material of the second ring makes Him speak as a biologist. He constantly refers to seed, to birth, to growth, and to development. Potently delicate, indeed, is this finer ether that lies within us, since it can be molded into a body so tenacious that corporal death can not break it down, and so naturally He tells us that anything less than a life for others utterly destroys it. The wages of sin, He says, is death; and probably no greater scientific truth was ever enunciated. Let a man live a life for others; let

him value the moral personality more than the physical, and he has acquired an individuality which, since it can not be propagated by cell division, can not be destroyed by cell dissolution. On the contrary, let him lead an essentially selfish life, and he acquires no other individuality than that which can be propagated by cell division, and hence which can not withstand cell dissolution. All men have the potentiality of this psychic body, which develops within the physical body, as long as the conditions of development are supplied, and in a few cases no doubt the dissolution of its physical investiture is felt actually as a relief. But in a vast number of cases, (as we are to infer from the declaration of Jesus that many are called and few are chosen,) death would end all, since many have acquired no other individuality than that which is propagated by cell division. It requires no stretch of the imagination to grasp this fact. If man is built up of electrons, which are whirls in ethers of varying densities, then he has the potentiality of as many existences as there are ethers. Now mathematicians, as we have said, assume that there must be several, perhaps five; but suppose they are infinite—and it is inconceivable that they are limited—we have at least conceived a method, and a very orderly one, by which man can evolve for all

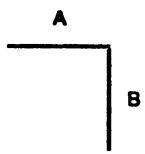
time, existing in each ring, or plane, or dimension of matter as long as he supplies the conditions of existence, then passing on to the next, as we do in our physical death. The only shocking element in the concept is that it places man so low in the scale of existence—almost at the very foot of the ladder.

TIME AND SPACE.

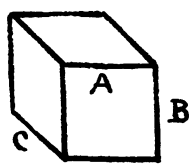
We now approach the subject of time and space, the absence of which seems to be a characteristic of that which moves on the plane of the second ring, or, if you please, of that which is built up of the electrons of the metaphysician. They are a subject by themselves, and though hundreds of volumes have been written in explanation, the ordinary man who reads remains yet hopelessly confused. Still it is possible to imagine, analogically, a condition of space other than that which we have actually experienced. It does not avail us anything to take refuge behind the expression—it is inconceivable. Infinity, for example, is absolutely inconceivable, yet we know that it exists. An infinity before us and an infinity behind us are beyond the power of the mind to grasp, yet we know that they exist, and that they are as great truths as any ever presented to the mind of man. Though as difficult to grasp as infinity itself, men for ages have recognized the necessity for the existence of another dimension in space, for without it many phenomena are wholly inexplicable. Some reject it on the score of inconceivability, but logically they

would have to reject infinity for the same reason. We can not comprehend a fourth dimension, but analogy will aid in the effort to grasp the idea. Let

A, B, C, and D represent lineal dimensions in space. A and B would give us a figure thus—



And an organism capable of moving only in the directions A and B we should call a two-dimensional organism, or being. A, B, C would give us a solid thus—



Bodies capable of moving in the directions A, B, C, we should call three dimensional, such, for example, as our own bodies, and all substances that, under ordinary circumstances, we can see, feel, and hear. But since A, B, C, D, from the standpoint of geometry, would represent something that can not be conceived, we must here resort to analogy. We

may conceive an organism capable of moving only in the direction indicated by the line "A," and we should call it one dimensional. An organism capable of moving in the directions of B and C would inhabit a flat-land, figuratively and literally, and the entrance therein of a three-dimensional body would appear to the inhabitants thereof as an astounding miracle, since to become invisible to the denizens of this world a three-dimensional body such as ourselves would have to move only up or down. The reader will see at a glance that the flat-lander is capable of seeing only in one plane, and that to him an object would become visible or invisible as it was moved within or without that plane. "In what way," will be asked, "does this aid us to grasp the idea of a fourth dimension?" Fix well in mind the position of the flat-lander who is regarding the entrance of a three-dimensional body into his world, and ask yourself the question, "What manifestations in this world are analogous to the entrance of a three-dimensional body into a two-dimensional world?" Only in this way can we conceive of a fourth-dimensional body. And in this connection let us read a passage from a pamphlet written by A. C. Taylor, a very practical English civil engineer:

"Suppose that a cone enters flat-land point first and obliquely. Its first manifestations will be a

point; afterwards a very small ellipse will be formed, which will grow larger and larger. The superficies will be formed of ever-changing sections of atoms of which the cone is formed. In this we see an analogy to growth generally in this world. If the cone was not strictly homogeneous—say if it was of sandstone or steel—the changes in the superficies would be of a wonderful, mysterious character, somewhat analogous to chemical changes in this world.

"If this solid body were a living one it would be made manifest by sections of ever-changing living cells; and we can imagine such sections to represent two-dimensional cellular life. The sections of a solid body, such as a hand, might result in several two-dimensional figures. The conception that these were in any way connected would be very difficult to the inhabitants of Flat-land. Certain shaped solids would result in sections which gradually merged one in the other, or in a section which gradually became segmented in several parts. There is some analogy between this and reproduction in this world. Let us now turn to this world and imagine how, analogically, fourth-dimensional bodies would be likely to manifest themselves here. It would appear that a fourth-dimensional body passing through this world would manifest itself in the form of a solid, varying in shape, size, and con-

stitution. Vegetable and animal life and chemical changes are of this character, and are therefore possible manifestations of fourth-dimensional activities. Viewing human life from this standpoint, the conclusion may be reached that I, as I write this, am merely that section of my fourth-dimensional self that happens to be passing through this world at this moment, and that the whole of me, from my birth to my death, is a fourth-dimensional entity; that the past and the future are past and future only in a three-dimensional sense, and that in a fourth-dimensional sense the past and future are present—that is, both what was and will be is."

Again, we quote from the same author:

"Our conception of time is due merely to the periodicity which exists in nature in the alternations of day and night, winter and summer, in the swing of the pendulum, etc. It is merely a coincidence that duration corresponds generally with time periods, a coincidence due to the fact that our subjective sense of duration depends primarily on the periodicity of our heart-beats. That there are other factors on which duration depends is a fact that we have all experienced, but it seems probable that these other factors are also due to some form of periodicity, possibly of nerve functions. If we

were in a condition where we felt no bodily pulsations, where we saw, heard, and felt no alternating differences, I believe there would be no sense of duration, and an infinity would be the same as a second. Rhythm is the most universal feature of our universe from the highest to the lowest, from the simplest to the most abstruse detail that we are acquainted with. But rhythm may be a peculiarity of three-dimensional matter only, and it is possible that time, therefore, has no analogue in a fourth or a higher dimension." In other words, that only on the plane of the first ring are we conscious of time and space relations.

We are told again that the clearest conception of a fourth dimension may be reached by thinking of it in connection with the non-existence of time and space. As the first step in the process, let us try to conceive the creative principle as pure thought, and not as concrete form, and in so conceiving it we have pictured it as existing devoid of its time or space elements. This is relatively easy to do. Next try to conceive *anything* as existing divorced from its time and space relations, and we conceive it necessarily as existing in the active present, here and now; in fact, in an "universal here and an everlasting now." The antithesis of this is the conception of things as expressing themselves

through the conditions of time and space, thereby establishing a vast variety of relations with other things, such as volume, distance, sequence of time, etc., etc. The first is the conception of the extreme idealist; the second is that of the extreme materialist. The mistake of the first lies in this, that he is trying to establish an entity with the abstract alone. The mistake of the second is that he is trying to do the same thing by considering the concrete alone. It is clear, however, that only by combining the two can we reach that for which we are striving, viz: reality. In other words, the materialist tries to conceive of man on the plane of the outer ring alone (the concrete), the idealist on the plane of the inner ring alone (the abstract); but as man is composed of the outer ring, and all that that contains, clearly the effort to regard him from the standpoint of any single ring or plane would be as unsatisfactory as viewing a part for the whole. Nothing is surer than that time and space exist, but they exist for the three-dimensional, physical brain only. The brain of the fourth-dimensional body, however, does not recognize time and space, and sees in matter only the ultimates thereof; recognizes, for example, that the electron, from which all matter is constructed, is simply the expression of an All-Sustainer's will or thought, which, as we have seen above, is relatively

easy to conceive as divorced from concrete form. In other words, that *time,* in the sense in which we use the word, exists only for those on a three-dimensional plane; and this view is almost invariably confirmed by the experience of those who have been able, even to a slight extent, to eliminate their physical selves. It is a significant fact that all the mystics and all the founders of great systems of religion and morals have evinced a singular facility for mixing their tenses. Jesus himself is not exempt, since he declared that "before Abraham *was,* I *am.*" So much, then, for this entity which, for want of a better name, we call the fourth-dimensional body, or the body of the second ring. One of the characteristics of the ether which enters into the first ring is that it assumes forms or dimensions which may be described by the terms length, breadth, and thickness; in other words, that the substance of the first ring is material. The form or dimension assumed by the ether composing the second ring can not be described by the terms length, breadth, and thickness; that is, it is immaterial. The first ponderable, the second imponderable; the first ring has the properties of matter, the second has not. Such a supposition is by no means a scientific absurdity, since we have seen that the emanations of radium possess properties that lie between the ponderable and the imponderable.

DUAL MENTALITY.

It might be denied that man possesses two bodies, but that he possesses a dual mentality is practically universally admitted. The seat of intelligence of the physical body, or the body of the first ring, is the physical brain. But where are we to look for the seat of intelligence of the fourth-dimensional body? Suppose we place a subject in a state of deep hypnosis, so deep as to be insensible to pain, even though we should plunge a white-hot needle into the flesh, his physical body is certainly not alive in the scientific sense, since it does not respond to stimulation. Under such circumstances a surgical operation might be performed on the most sensitive portions of the brain itself, and the subject would be none the wiser, so far as sensation is concerned. But new powers and functions are brought into being exactly in proportion as the third-dimensional faculties are held in abeyance, faculties and functions that far transcend those of ordinary consciousness. Give a subject under these circumstances, perfectly dead to physical surroundings, a premise of any character, and he will invariably draw the correct conclusion. Give him

a glass of water; tell him it is whiskey; he drinks it and staggers. The writer has witnessed many experiments with hypnotized subjects, and he has yet to observe a single lapse in these mental processes. The mind of the fourth-dimensional body can not classify a series of known facts and reason from them up to a general conclusion; but give it a general conclusion to begin with, and it will argue deductively down to every legitimate inference with marvelous rapidity and brilliancy—infinitely above the capacity of the subject in his normal condition. The transformation is often startling; in one moment we may be talking with a very mediocre individual, in the next, under hypnotism, we may have a genius on our hands. The physical brain, it appears, is in no way connected with these mental processes. Evidently some power or intelligence, a power or intelligence that transcends all ordinary experience, is at work. The fourth-dimensional intelligence is the real genius. We can not play a piano, or ride a bicycle, or drive an automobile until our "muscles are automatically educated," which is but another way of saying that the fourth-dimensional mind is the master. It is a mind of perfect memory; and what it has once acquired it can not forget. To give but one of thousands of instances: the writer once saw an ignorant negro placed in a

state of hypnosis, and while in this condition ten or twelve lines of the Greek text of Thucydides were read to him. Five months later the man was again hypnotized, and upon command repeated correctly not only the words, but imitated with astonishing accuracy the reader's voice and inflection. Endowed as this wonderful intelligence is with the instinct of self-preservation, its operations seem incredible. Walking along the escarpment of some precipice while under the influence of the fourth-dimensional mind (or while asleep, as we should say), the somnambulist is guided with unerring accuracy, but let him awake—let him become subject to the action of the physical brain—and he is dashed to death. Instead of being localized, it seems to penetrate every part of the body, and hence, in the descriptions of its operations, we so often hear the term "reflex action." But we must beware of this penchant of the materialist—this habit of using a single word or a phrase to describe a process. It is too easy to be comprehensive, and it ought therefore to arouse our suspicions. Diabolical possession, for instance, was denied by scientists, until they coined a word, hystero-demonopathy, by which to aperceive it. Give them time, and the old-fashioned levitation and prophecy will creep into the fold, so dearly do the scientists love a name.

A frog's brain is excised; a drop of irritant acid is placed on its back; instantly an intelligent effort is made to dislodge the disturbing element by scratching the back with the foot. Herbert Spencer and his school will tell you that this is reflex action; but if this fourth-dimensional intelligence pervades every part of the body, and is, above all things, endowed with the instinct of self-preservation, then, the frog deports himself, under the circumstances, exactly as we should expect. Few phrases have been more abused than "reflex action," and few writers have offended more in this respect than Herbert Spencer, who considers all instincts reflex actions; and as if this were not sufficiently comprehensive, he informs us that reflex actions are instincts. To do him entire justice, however, he often finds it impossible to adhere rigidly to his formula, for when he meets an instinct that is obviously not reflex action, he tells us that it is compound reflex action. The most abstruse phenomena are now clearly and readily elucidated by the term *telepathy*. But it should be remembered that up to a few years ago the orthodox denied the genuineness of all phenomena that even smacked of thought transference. The great Helmholtz himself said in this connection: "Neither the testimony of the members of the Royal Society, nor the

evidence of my own senses, leads me to believe that thought can be transferred from one person to another independently of the recognized channels of communication." The most abstruse phenomena, as we have said, are now explained by this term, and yet "telepathy" refers but to a coincidence of psychically related states, plus the assumption of a causal connection between them; but it describes no known process, and hence explains nothing. If a sleeping man, for example, have a needle suddenly thrust into his foot, the injured part is instantly and intuitively withdrawn. Now, much of our thinking, as will be admitted, is done below the plane of consciousness. Thought begins with the cell which chooses, discriminates, and selects, and since the cells permeate every part of the body and every cell is endowed with the instinct of self-preservation, a pin thrust will be followed by an involuntary and instant withdrawal of the injured member.

This consciousness is known to us not only as "reflex action," but as "instinct"—a term, by the way, which is used to cloak a vast amount of ignorance. But instinct does not explain the action of Eumenes, a kind of wasp, which in providing food for its young displays a knowledge which it could not have acquired from an ancestor. Realizing

that its days are numbered, the female builds a cell in which she lays the eggs. Before this cell is sealed she fills it with spiders, stung in such a manner as only to paralyze their power of locomotion. Thus the future larvæ are provided with live food, a meat, by the by, upon which the mother never feeds. We say that here is displayed a knowledge for which no ancestral experience could have afforded a precedent, since the mother invariably dies before the eggs are hatched. The use of the word "instinct" in this case is worse than useless, and only accentuates our ignorance. This example is quite sufficient to illustrate our point, though hundreds of others could be given among ants and bees, and hymenoptera generally. Who, for example, can read that truly marvelous book, "The Life of the Bee," by Maeterlinck, and be willing to accept "instinct" as an explanation of the phenomenon which is described by the term "spirit of the hive"?

Our explanations of phenomena are too often only names of phenomena. This intelligence, one of the objects of which seems to be the preservation of life, permeates every portion of the bodies of all conscious organisms. It can not be localized; it is ever watchful, ever alert, and knows no fatigue. This is a startling proposition—that a

working organism never tires—and we should be inclined at first glance to question the truth of the assertion, yet we are all acquainted with the fact, as the following example will show; but so common is it, so familiar a phenomenon, that we have ceased to regard it. The physical brain of the three-dimensional body would hopelessly fail under long-sustained periods of labor, so sleep is necessary for rejuvenation, and probably one-third of our lives we lie drugged with slumber. But the brain of the fourth-dimensional mind, with all its functions, knows not fatigue. Regard for a moment the powerful array of chest and abdominal muscles that carry on the work of respiration. With each deep inspiration we lift about 500 pounds through the space of about one inch. Through the course of a lifetime thousands of tons of blood are pumped by the heart through the body. These organs are controlled by nerves, and the nerves by a superphysical intelligence which, fortunately for us, requires no sleep. The tremendous amount of intelligent work carried on in the body, while the only consciousness which the average man recognizes is dead, is truly astonishing. The physician, above all others, should appreciate this, but unfortunately the majority of the profession are unable to shake off the early influ-

ence of official teaching. As a rule, he looks for an external, extrinsic truth, and hence yields to a fact (?) without discussion, and, untrained in philosophic reasoning, often confounds his hasty generalizations with the facts themselves.

This fourth-dimensional consciousness is the very antithesis of the third. Under no circumstances can they dwell together in harmony—a fact which was recognized by Philo, and which he expressed as follows: "Our understanding departs when the divine spirit arrives, and it returns after the latter has departed, because the mortal and the immortal can not dwell together."

This physical brain looks into the past of the human race, and sees there only a record of blood and tears, of helpless blundering, of stupid acquiescence and inane aspirations. Delving in the condition of the present, it sees only the vice, misery, the injustice, the appalling wretchedness of countless millions, and concludes that our position here is wholly illogical, that life is an unceasing Via Dolorosa under the inexorable lash of a tyrannical master, and that we are the children of an irresponsible fate and the heirs of an unawakening death.

The future yields no brighter prospect, for it is merely a question of time before the earth "swings rayless and pathless and tideless in the moonless

air," no longer tolerating a race which for a brief moment disturbed its solitude. The fatal quality of atomic dissociation will drag even matter down into the dust. Death itself, and love, which is even stronger, will be as though they had never been; and all that is will be neither better nor worse for all the love, all the suffering, all the friendship which countless generations of men throughout the ages have striven to effect.

The physical brain is of the earth earthy. It dwells in space, recognizes time, and is affected only by time and space relations. It is that consciousness which is oppressed by skepticism and by a sense of remoteness from God when the littleness of man is contrasted with the vastness of the physical universe as revealed by modern astronomy. It is that consciousness which does not perceive that time and space are relative, that the electrons within the atom rehearse the order of the universe, reproduce the glory of the heavens, and that in a single dewdrop there are whole systems of whirling suns and planets which vastly outnumber those revealed by the most powerful of telescopes.

The fourth-dimensional consciousness, on the other hand, is that which, despite the terrible past, the paralyzing present, and the appalling future,

realizes that our position here is logical, *feels* that our earthly lives connect a well-ordered past with a well-ordered future, *knows* that all are but parts of one harmonious whole, and that love is the basis of all things. To those who have entered this state it is not a question of mere belief, they know, and they know by the surest method upon which truth can be built—the certitudes of consciousness.

The three-dimensional brain is the brain which sees the contradictions* of life and oppresses us. The fourth-dimensional brain is the brain that reconciles the contradictions, and would lift us up.

Friendship and love are absolutely necessary to a normal existence, and yet when we would give physical expression to these sentiments our hands are fettered. Solitude and silence are appalling to us; every act of our lives is an effort to escape them; but as soon as we grow out of the illusions of youth we find that life's journey is made in a silence as deep and as dark as the grave. We

* Wherever we turn we see the contradictions in nature. "Increase and multiply" is an injunction of divine origin. Yet turn to Newton, to Young, to Fresnel, to Bacon, to Faraday, to Spinoza, to Kant, to St. Francis of Assisi, and to that great Carpenter who has made holy the name of Nazareth, and they tend not to offspring. Maeterlinck tells us that the queen bee's brain turns to pulp that her reproductive organs may profit; and among the workers, on the contrary, those organs atrophy to the benefit of their intelligence. Is it possible that with growth of intelligence comes decrease of population? Such are the problems evolved in the three-dimensional brain to be solved later in the fourth to the complete satisfaction of man.

reach out our arms for the friendship of the soul, for the power which binds heart and heart, and which we feel must exist, only to be crushed by the realization of the truth of Flaubert's dictum, "Nobody understands anybody." We would know one another better; we would love one another better; and yet the effort to bare the heart does but increase the already impassable gulf between us—between the devoted husband and wife, the mother and child, and the dearest of friends. Heredity and environment are the four walls of the bottomless pit into which nature has cast us, and within whose awful depths no kindly touch is felt, nor heard the echo of a friendly voice.

The physical brain being a brain of time and space, and therefore capable of being in relation to but one thing at any single moment of time, would very naturally deduce what we have asserted to be characteristic of it. The fourth-dimensional brain, on the other hand, being above time and space, and therefore capable of being in relation to all things at any single instant of time, would naturally deduce the very opposite. But words utterly fail us here. One must experience in order to know. Suffice it to say that men holding the first view, and suddenly changing their opinions, have been described on one hand as "mad" and on the

other as having been "born again." Some such illumination must have occurred in the case of the apostles who, at the moment of the arrest of the great Nazarene, denied Him, fearing the inconvenience of a Roman prison, and then, within a few hours, snapping, as it were, their fingers in the face of Rome's authority, daring it to do its worst in the way of fire and sword, the scaffold and the stake. It would seem that this attitude of mind has even a practical value, for it can and does lift men above the fear of death and the power of pain, and that therefore men are justified in making a serious effort to attain it. Not that every one should live upon this exalted plane, for that obviously is impossible in our present stage of development, but it is to be desired that all men should devote at least a few moments of each day to the experiment of throwing off the illusion of self. Suppose the time the ordinary man devotes to the lip service which he calls prayer were expended in an honest effort to supply the conditions for the entrance of that light which gives a new aspect to the things of life, his position here, as Professor Muirhead has said, would be rather that of a god than a man.

The relation of these two minds to what we call the "truth" has no doubt occurred to the reader, but before we attempt to discuss it we must give some answer to the question "What is truth?" It is a concept or ideal presented to our minds through the medium of language, and as language and ideas develop and change, so must change our concept of truth. In our present stage of development we can differentiate two kinds of truth—the absolute and the relative. The latter concerns itself with the "conformity of knowledge with the reality known," concerns itself with such an obvious fact as the existence of this knife and pencil, and never asks if they are only figments of our brain. The knife and pencil are relative truths upon which all sane people are agreed, and men have reached this conclusion through the operation of their three-dimensional physical brains. But the fourth-dimensional intelligence might go beyond this—might see in the knife and pencil only the ultimates thereof, might realize that force and not matter in the sense in which we use the word is the basis of the universe, might realize that under some cir-

cumstances they might appear as unstable as the wall through which passed the body of Jesus of Nazareth. There is no concurrence of opinion, then, regarding the absolute truth of the knife and pencil, as there is in respect of their relative truth. Can we say as much in regard to the spiritual? It appears not. Indeed, it seems that there are no relative truths in religion that have the common assent of men. On the contrary, faith appears to be the very "matrix of relative truth in religious matters"; and hence faith, as the wise from time immemorial have taught, is the *sine qua non* of spiritual development. If this were better understood, there would be no such divergence of opinion as is characteristic of the pulpit today—a divergence which grows with the increase of three-dimensional knowledge, and which, however, is perfectly natural because, in speaking or writing of spiritual matters, we are attempting to describe fourth-dimensional experiences in a language evolved wholly from the contemplation of three-dimensional phenomena, and this we can no more accomplish than could a deep-sea fish relate its temporary experiences in shallow water. The two planes, the third and the fourth-dimensional, are separate and distinct, and the divergence of experience, as we have said,

is so great that only in a separate and distinct language can it be recounted. The language of the fourth is what we know as clairaudience; it is a telepathic process, and only by employing it can we acquaint one another with the relative truths which we may have discovered. So much, then, for relative; but absolute truth in religion is quite a different proposition, for it concerns itself with the very fount of things, and hence we can not know it. All we can do is to approximate it, and we can approximate it nearer on the fourth plane than on the third. It is doubtful if in this life man can attain to a greater approximation of absolute truth than the conviction that this universe is the personal life and daily experience of the All-sustainer; than the realization that every detail thereof; that every movement in every flagella of every micro-organism; that every beat of a mother's breast, whether of pleasure or pain; that every quake in the planets that fill the voids; that every pulse in the fiery tides of the myriad stars He weaves into one harmonious whole, which is His Ego, His Life, and His Personality. Briefly, then, the function of the physical, or three-dimensional brain, is to establish relative truth in matters material, while the function of the fourth is to establish relative truths in matters spiritual, and to approximate absolute truth in mat-

ters material and spiritual. It is not an exaggeration to say that the vast majority of the confusion attending arguments on religious or moral questions is to be attributed to our efforts to establish absolute truth by the operations of the three-dimensional brain. The great moral principles about which men have so much to say shift from generation to generation; they change from day to day, and hence are not moral principles at all. They are at most only relative truths, and are true only in so far as belief or faith in them has made them true. Murder, suicide, polygamy, slaving, and piracy have all been defended on "high moral grounds."

THERAPEUTIC VALUE OF FOURTH-DIMENSIONAL CONSCIOUSNESS.

We are now acquainted with some of the characteristics of the third and fourth dimensional minds. We have seen that the former, which is the physical brain, often becomes a master of induction, and that the latter is godlike in its deductive power. It is immaterial what premise you give it, it will reason invariably and instantly to a correct conclusion—if the premise be false, to a false conclusion; if ridiculous, to a ridiculous conclusion—but it must be borne in mind that the reasoning will always be correct.

To the student of medicine the following will strongly appeal: To a person in a hypnotic state repeated suggestion that he is strenuously exerting himself, as in running, or fighting, or lifting a heavy weight, the physical or logical effects of such actions would be manifested in a quickening of respiration and heart action; and these are to be found in the subject in a striking degree. If this statement is correct—and it is well within the power of any intelligent and interested man to demonstrate its truth or falsity—we can readily ap-

preciate to what extent this power would operate as a factor in therapeutics. It will not do to ignore the fact that a simple suggestion will affect the involuntary non-striated muscles just as would a powerful poison. The astonishing recent success of many distinguished divines and physicians in New York and Boston, and elsewhere, eloquently confirms this view of the matter. And now to summarize: The fourth-dimensional intelligence is impersonal, and receives every impression imposed upon it, good or evil, constructive or destructive, and acts its part with inimitable accuracy. Its powers far transcend those of ordinary consciousness, as evidenced by the presence of new functions, such as mind reading, thought transference, clairvoyance, and the like. It possesses the power to diagnose the character of disease and a knowledge of the various organs of the body often exceeding that of the skilled physician. At times it dispenses with medical resources, and accomplishes its results by dwelling upon the diseased parts, restoring them to their normal conditions by repeated suggestions of perfect health. To such an extent is it endowed with the creative principle that we are justified in saying that our bodies are verily what we think them to be. The great Lamarck, though preeminently a man of science, realized this in a meas-

ure when he said that all growth was from within; and the evangelist Mark, though deriving his information from an entirely different source—the fourth-dimensional mind—reached the same conclusion and expressed it in the ever memorable words: "Whatsoever ye pray and ask for, believe that ye have received, and ye shall receive." Make no haste; plant the seed of desire; look upon your mental creation as spiritual realities, and let the Divine intelligence do the rest. Hence "he who believes shall not make haste," is one of the greatest scientific truths ever enunciated. There is scarcely a work devoted to the discussion of philosophic or religious questions that fails to warn us of the destructive power of doubt, while impressing upon us the efficiency of faith. However much intellect is to be commended, it has its disadvantages, since it increases our doubts, and therefore becomes the greatest hindrance to our success. All progress is from below upward; hence we should expect to hear wisdom from the humble and unintelligent. They have not their intellect trained to doubt, and hence they often see intuitively and instantly what so often comes laboriously, if at all, to the better disciplined intellect. For example, St. Francis of Assisi—who was nearer like Jesus than any man probably before or since his time, as he wandered

through the forests of Italy calling the winds his brothers and the birds his sisters—was very close to the truth of that great biological generalization that all are of one origin, and constitute one relationship. In all his moments of ecstacy (contact with the second ring, brought about by fasting and prayer, or perhaps as the result of some slight congenital perversion of the nervous system) he realized the divine nature of the very earth on which he trod. He saw with the fourth-dimensional mind that matter is a projection from a spiritual plane—saw instantly and clearly what modern science, with its three-dimensional brain, has been so laboriously evolving through all the centuries, viz: that the aggregation of electrons which we know as the earth is simply an expression of the Will or Thought of the All-Sustainer. The earth appears as an expression of the will of the All-Sustainer, and as the great is but an image of the small, health and whatsoever we wish appear in us as the result of our will. What the great Creator does on a gigantic scale, we, feebler creators, do on a smaller scale—the difference being one of degree, not of kind. And Jesus, realizing the tremendous creative power of will, or desire, inherent in man, when asked where the kingdom of heaven was, very naturally replied: "It is within you." Hence

that "as a man thinketh, so he is," is a scientific verity. This is the weak point in the position of the Christian Scientist. Under the illumination of the fourth-dimensional consciousness he realizes that time and space are only relative, and that matter is not the stable thing we conceive it to be. Misled by this phenomenon, he asserts the unreality of all things, including sin and disease. He fails to see that sin, disease, death, and matter are stern realities when measured by a consciousness the seat of which is of like measure to the things measured, and that they vanish when estimated by an intelligence of a nature unlike the things estimated, for man ("manas," the thinker) knows in the world of his own being, but he knows in that world only that which is of like nature to himself.

When the individual is well seasoned in all the details and experiences of time and space, or when he is peculiarly "well balanced" or developed from a physical standpoint, he is seldom or never aware of the existence of this inner self, or inner ring. Time and space being the essential characteristics of the outer ring, of the physical self—being, indeed, the very instruments through which they function—we are powerless to raise the inner self to action unless we can eliminate time and space, or at least modify our relations to them. Is this pos-

sible? The materialist will deny it; yet the already accomplished suppression of the grosser instincts—the slow but sure increase of the clairvoyant faculty and the premonitions of biology—would seem to justify an affirmative answer. Too much importance can not be laid upon the depressing effects of time and space upon the inner self. In more than one instance the writer has heard intelligent men attribute the first weakening of faith to the study of astronomy. "The thought of infinite space," says Herbert Spencer, "in comparison with which our sidereal system dwindles to a mere point, appalls me." And so with large masses and large numbers generally. Indeed, few environments are more calculated to increase the sense of insignificance, and therefore to weaken the conviction that there is anything in man worth carrying over into another life, than a vast crowd, a fact to which Byron refers in characteristic phraseology. It is probably no exaggeration to say that Copernicus, through the establishment of the truth of the geocentric system, and the consequent opening up to the mind of man those awful vacuities of space, did more to weaken the hold on the old orthodox faiths than all other men combined. But it all depends upon your point of view. It is a purblind philosophy which says, as Dr. Darwin so despairingly de-

clared a short time ago, that our earth *is but a puny planet* circling around a star of inferior magnitude. Relatively to others that are larger, of course it is; but ours is one, knit in common kinship of material with all the rest, and not only not isolated, but absolutely unified by that all-pervading ethereal medium of which all things are but temporary manifestations. But there seems to be as much below man as above him. The human body relatively to the world of the atom is an aggregation of countless trillions of sidereal systems. Why not sometimes at least compare the body with something smaller, instead of something larger than itself? or why not, as in a state of prayer, modify our relations to space and time which, since they are characteristic of three-dimensional matter only, can but veil the relation of the inner self to the All-Sustainer? Man possesses the potentiality of many and varied powers, but none so pregnant with the possibility of good as that which enables him to divorce himself from himself, and thus to stand in nearer relation with the Absolute.

STIMULATION OF THE FOURTH-DIMENSIONAL CONSCIOUSNESS, AND ITS EFFECT.

Let us bear in mind that there are two methods by which our relations to reality may be apprehended. One is by induction, through the operations of the three-dimensional brain, through scientific research and investigation, and this is necessarily slow, laborious, and tantalizing; the other is by deduction through the operations of the fourth-dimensional brain, and this is swift, immediate, and self-convincing. It is said that the normal man can reason both by induction and deduction. That he must be more or less of an expert in the former method is self-evident, since he himself and his whole environment are on a three-dimensional plane, and deprived of this power he would be as incapable of caring for himself as an insane subject. But that the perfectly normal, well-sustained animal, man, ever reaches a great fundamental truth by deduction is to be doubted. Such, however, by rendering himself abnormal may become a master of deduction, and proficiency in this respect seems, at times, to bear some relation

to the degree of abnormality induced. Divergence from the normal may result from a blow on the head, a brain lesion, the delirium of fever, prolonged fasting, or a congenital perversion of the nervous system, and subjects of all of these conditions have at times acquired powers of deduction that far transcend those possessed by them in their normal state. In fact, even a momentary derangement of the nervous system, induced by causes of which we are wholly ignorant, will often suffice. But whatever the cause, the effect is most startling, and even when the veil has been for a moment lifted the experience or vision of the percipient has been so vivid that it can be described in no other language than "sternest reality of life." Numerous instances might be cited, nor can the evidence be disputed, for it is so abundant, so consentaneous, that we must accept the facts or deny the possibility of certifying facts by human testimony. Divergence from the normal may be produced and controlled more perfectly by fasting than by any other method. Hence the founders of the most spiritual religions and the most perfect systems of philosophy and morals have been not only abstemious men, but have insisted upon placing fast before prayer. Whether with or without significance, the fact remains that religious and lofty ideals have been pro-

duced not in beef, but in rice eating, countries—that is, among abstemious people—and doubtless there is much truth in the vulgar saying, "You can not reach the heights on a loaded stomach." Anything, it appears, that destroys the nervous balance at times, tends to bring about more or less of that illumination which is characteristic of the fourth-dimensional intelligence.

SPIRITUAL EXALTATION.

Only on two occasions has the writer been the recipient of anything like it, and in both it was after periods of great mental distress. The phenomena, which lasted for a few moments only, are impossible to describe for the excellent reason that language which has been evolved from the consideration of the material could not very well suffice for the description of super-physical things. Many have attempted to convey their impressions, but with ill success, and the writer, hoping to profit by the failure of others, will only say that he was convinced during the illumination, and conviction has grown with the passing years, that life, which proceeds from the All-Sustainer is immortal—that a consciousness exists apart from that which the average man recognizes, that the shadow cast by the glorious light of the second ring is what we call the physical body, and that matter is not dead, but a living presence. The mental elevation, the increased capacity for the perception of truth and the feeling of perfect love, trust, and confidence are characteristics no less marvelous. An acquaintance with this illumination is by no means new to man.

On the contrary, it can be traced back until it is lost in the twilight of fable. It was known to the Hindus from the earliest times as Kaivalya, to the Jews as Jahed, to the Greeks as Monogeneia, or "alone-becoming," the power of divorcing yourself from your time and space relations, hence of placing yourself on the inner ring. Jesus, possessing this power to a supreme degree, has been called not only the "only begotten," but also the "Alone-becoming Son of God."

There is an unbroken record of men from Zoroaster to Walt Whitman who have been in touch to a greater or less extent with the fourth-dimensional intelligence.* Let us examine for a moment the experiences of the three greatest characters of history, whose personalities for the last twenty-five hundred years have dominated the imaginations of all men, Gautama, Jesus, and Mohammed. The illuminated Hindu says, "They who by steadfast mind have become exempt from evil desire and well trained in the teachings of Gautama; they, having obtained the Fruit of the Fourth Path, and immersed themselves in Ambrosia, have received without price, and are in the enjoyment of Nir-

* The history of the "Illuminated" in all ages has been admirably told by Dr. Richard Maurice Bucke, in a work entitled, "Cosmic Consciousness," to which the writer is greatly indebted.

vana." Nirvana is described as a "consequence of understanding that all things are equal." "There is no real Nirvana without all Knowingness," and though this is the language of the enthusiast, and smacks of exaggeration, it is an accurate description of one phase of the fourth-dimensional experience. Not that men, under these circumstances, know all things, yet they feel that they possess such a power; but, hampered by the physical plane and the language thereof, they are unable to describe even what they see. And again: "He who beholds all things in the self and the self in all things, he never turns away from it." Such experience seems common to all mystics, and anyone who has been without the physical self even for a moment can hardly doubt that the great Hindu teacher had attained to the super-physical plane. The experience of the great Nazarene was, in some respects, at least, similar to that of many of the illuminated. How often are we told in the descriptions of these phenomena that they are accompanied by a great light, or flame, or cloud, supplemented by an objective voice of command. "And straightway coming up out of the water, he (Jesus) saw the heavens rent asunder, and the Spirit as a dove descending upon him; and a voice came out of the heavens saying, 'Thout art my beloved Son; in thee I am well pleased,' and

straightway the Spirit driveth him forth into the wilderness." Mohammed also heard the voice, and he, too, sought solitude in the wilderness, in obedience to the commands of the Spirit. Hundreds of passages might be quoted from the New Testament to prove that Jesus was acquainted with and had actually experienced the fourth-dimensional illumination, but one will suffice. It stands for itself, and needs no comment: "Verily, verily, I say unto thee, except a man be born anew he can not see the Kingdom of God." "I felt like one born into a new world" is a common expression with those who attempt to describe their fourth-dimensional experiences. Let the reader picture a man with an intelligent, kindly face, inclined somewhat to melancholy, and with a nervous system so exquisitely balanced that the slightest physical pain or even unpleasant odor would impair its equilibrium, and probably that man could tell something of the things that lie at the basis of the physical. Such a man was Mohammed. The wilderness (solitude), fasting, prayer, visions (so-called), the sudden illumination, the voice of command, enthusiasm, or faith in the mission and development of the great powers which, fortunately for humanity, are turned generally towards altruism. All these experiences were his. Mohammed was a perfect type of the

second-birth man, in so far as he experienced all the successive steps towards the attainment of that end. Perhaps the sequence of steps was as well marked in the cases of Gautama and Jesus, but unfortunately only fragments of their lives have come down to us. But the list of names in the ancient times is a long one. Those interested will be well repaid in reading anew the Old Testament, especially of Moses, of Gideon, of Isaiah, and of Esdras. No race has been without this illuminating intelligence. The Chinese, in 604 B. C., produced one of the greatest lights in the person of Lao-tsze. So powerful is the conviction that this fourth-dimensional consciousness is a separate entity that it is often addressed as a different personality. Christ called it the Father, and Lao-tsze the Tao, or the Supreme Being. He says: "He who is skillful in managing his own life travels on land without having to shun rhinoceros or tiger, and enters a host without having to avoid buff coat or sharp weapon. The rhinoceros finds no place in him into which to trust his horn, nor the tiger a place in which to fix its claws, nor the weapon a place to admit its point. And for what reason? Because there is in him no place of death. He who has in himself attributes of Tao is like an infant. Poisonous insects will not sting him, fierce beasts will not

seize him, birds of prey will not strike him." This is no exaggeration—without one's self, one is on a higher plane—and it has been demonstrated that wild animals will not attack one, even in a partial state of hypnosis. This has been proved time and again in India with the venomous snakes and the most ferocious beasts of prey. In Paris, a few years ago, a woman in a state of hypnosis was placed in a cage with three lions; instead of attacking her, they seemed awed, as though in the presence of some strange and unearthly power. The prophets of old were men pre-eminently of this character; hence we can readily believe that Daniel availed himself not of supernatural, but of transcendental means. One of the most striking figures of the first century after Christ was Apollonius of Tyana. Little is known of his early life, but in the zenith of his powers his name was a household word throughout the limits of the Roman Empire. He was the only man, it appears, who incurred the enmity of the brutal Domitian and escaped unscathed. In the account of the meeting between the Emperor and the sage, the fact is very apparent that Domitian knew he was in the presence of no ordinary man, and feared to put into execution his threats of death. Apollonius realized that his wonderful

powers (he was credited with miracles as great as those attributed to Jesus) were not supernatural, but within the grasp of all men, for when asked by Domitian how he could predict with such accuracy the plague at Ephesus, replied, "Because I live simply and eat little, did I the first perceive its approach." The feat which most astonished his contemporaries was the foretelling of the moment and manner of the tyrant's death—an instance of clairvoyance so true to every detail that it impressed the unbridled imagination even of that day. It will not be contended, of course, that every man who eats little and lives simply can acquire the power to divest himself, even partially, of his time and space relations. A congenital, unstable nervous organism, fostered by abstemiousness, is no doubt the key that unlocks the secret of Apollonius' success.

The middle ages, no less than ancient times, have furnished their quota of illustrious men, among whom may be mentioned Las Cascas, St. John of the Cross, Pascal, Spinoza, Swedenborg, Madam Guion, Roger Bacon, and Jacob Boehme. There is not a dull page in the lives of any of them, but that of Boehme is probably most suggestive. Of humble birth, practically without education, save that which he had himself acquired, following

the humble calling of shoemaker, yet he has been styled the founder of German philosophy. "Sitting in his room one day, his eyes fell upon a burnished pewter dish which reflected the sunshine with such marvelous splendor that he fell into an ecstacy, and it seemed to him as if he could now look into the principles and deepest foundations of things." Note the brilliant light, the increased capacity for the perception of truth, the "All-knowingness" which seem to characterize so many of the illuminated. Hartmann says of him: "He learned to know the innermost foundation of nature, and acquired the capacity henceforth to see with the eyes of the soul into the heart of things, a faculty which remained with him even in his normal condition."

Speaking of his first illumination, he said: "The gate was opened to me that in one-quarter of an hour I saw and knew more than if I had been many years together at a University." The majority of men would certainly deny that there was on record a precedent for the formulation of scientific truth from the homologies of transcendentalism, and yet it is believed that a diligent study of metaphysical resemblances resulted in the discovery of gravitation, the laws of force and orbicular motion. In other words, that the great inductions of

Sir Isaac Newton were based on the intuitional perceptions of this master of mystics, Jacob Boehme.

William Law says: "The illustrious Sir Isaac plowed with Boehme's heifer, and in deducing planetary attraction from the facts of Love, Newton used these words, 'Idemque dici possit de uniformitate ea, quod est in corporibus animalium.'" This quite suffices to prove that the gulf which separates Newton's mind from the mind of the average physicist of this day and generation is profound, indeed, and it recalls a significant passage from Professor Muirhead's "Ideals of Science and of Faith": "Time is ill-spent in bemoaning lost opportunities, but one can scarcely refrain from reflecting for a moment what our knowledge of the universe might have been today, and how our sociological conditions might have stood at present had psychology, rather than physics, been our chief study—had we examined and developed the latent spiritual faculties within us at least *pari passu* with our investigations of the material world without us, instead of adding the incubus of further complexity to the heavy-funded debt of ignorance with which humanity stands at all times weighted."

While under the influence or domination of the three-dimensional brain, it is effort wasted to

attempt to read Boehme's works; one must get without one's self to do so successfully. Students of Browning will no doubt appreciate this observation, since many, perhaps, realize that the deep meaning of the poet may be grasped only in certain prayerful moods. It is said of Browning, that when asked on a certain occasion to interpret a seemingly obscure line in one of his poems, he replied: "I can not do so now, though at the time I wrote it, it was very clear to me." But Boehme labored under no such disadvantage, for from the time of his second illumination until his death there was no lapse in his fourth-dimensional powers. In bringing to a close the brief sketch of this remarkable man, we can not do better than submit Claude de Saint Martin's estimate of him: "I am not young, being now near my fiftieth year; nevertheless, I have begun to learn German, in order that I may read this incomparable author in his own tongue. I have written some not unacceptable books myself, but I am not worthy to unloose the shoestrings of this wonderful man, whom I regard as the greatest light that has ever appeared upon the earth, second only to Him who was the light itself."

Dante, again, that divine singer of the Middle Age, realizing that the fourth-dimensional con-

sciousness was a thing apart, addressed it as Beatrice. And here is an illustration of the power of suggestion to warp the judgment and the critical sense. Students and interpreters of Dante regard Beatrice as his ideal of womanhood; some, indeed, go so far as to declare that she was a charming young girl with whom the poet in his youthful days was madly infatuated. Students, accepting the judgment of supposed riper scholars, see no inconsistency between these views and Dante's estimate of her, as set forth in the following lines: "A lady appeared to me robed with the color of a living flame; I turned me to the left, with the confidence with which the little child runs to his mother when he is frightened, or when he is troubled, to say to Virgil: 'Less than a drachm of blood remains in me that does not tremble.' And again: 'When I was near the blessed shore the beautiful lady opened her arms, clasped my head, and plunged me in where it behooved that I should swallow the water. . . . Beatrice was standing with her eyes on the eternal wheels, and on her I fixed my eyes from there above removed. Looking at her, I inwardly became such as Glaucus became on tasting of the herb which made him consort in the sea of the other gods. Transhumanizing can not be signified in words; therefore let

the example suffice for him to whom grace reserves expression. If I was only what of me thou didst last create, O love that governs the heavens, thou knowest, who, with thy light didst lift me!'" Strange, inexplicable conduct, if Beatrice had ever dwelt in the flesh; but with Beatrice as the fourth-dimensional consciousness Dante's text is perfectly intelligible. Those interested in the works of the poet would benefit by reading them anew, since many passages, wholly inexplicable on the old assumption, become as clear as the noonday sun. In this case, as in so many others, we have the sudden bright light or flame, the increased capacity for the perception of truth, and the source of all Knowledge.

The materialist will say, no doubt, that such literature and such authors might have served a purpose in ancient time, but now have no place, nor are they produced in this practical age. Let us step across the intervening centuries and ask Henry Thoreau's experience:

"I hearing yet who had but ears
And sight who had but eyes before,
I moments lived who lived but years
And trust discern who knew but learning's lore.
I hear beyond the range of sound,
I see beyond the range of sight
New earths and skies and seas around,
And in my day the Sun doth pale his light."

This is one of the finest descriptions extant of the result of the first stage of the fourth-dimensional illuminations. Many in this day see as Thoreau saw, but unfortunately for contemporaries they have not his literary ability, and so they live out their lives in obscurity. Walt Whitman, in any age, would have been regarded as a most unusual character, and "The Leaves of Grass," his greatest work, as the experiences of one who had seen and heard not as other men.

"Hast never come to thee an hour,
A sudden gleam divine, precipitating, burstipg all these bubbles, fashions, wealth?
These eager business aims, books, position, arts, amours,
To utter nothingness?"

Most of us at some time in our lives have been touched by a similar spirit, but how many can say with Whitman:

"I know that the hand of God is the elder hand of my own,
And I know that the Spirit of God is the eldest brother of my own,
And that all the men ever born are also my brothers,
And the women my sisters and lovers,
And that a Kelson of creation is love."

Still the pragmatist asks, "For whose benefit these idle dreams?"—incapable ever of realizing this truth that material advantage will not weigh in the scale with the knowledge that makes us free. But Whitman was no idle dreamer; unspeakable

joy was in his heart, and he had the power to reflect it in others. Of pleasing personality, voice, gesture, and manner, he was a favorite with both old and young, most people recognizing in him two separate and distinct personalities—the one human, for above all things he was a man; and the other superphysical, that power which enabled him to attract animals, and instantly quiet a fretting child or to fill an aching heart with gladness. The power of Love, which the fourth-dimensional consciousness always makes a *sine qua non,* was not with Whitman a beautiful day dream to solace his soul, for he lived it in his own daily life, and he advised others to do so. He held that it was the only existence, and that the ordinary way was misery and folly.

But of the modern illuminated man, Honore de Balzac was perhaps the most perfect specimen. The world admits his peculiar genius, for it knows not just where to place him; just what niche he fills in the Hall of Fame is still a debated question. A man is to be pitied who sees in Seraphita or Louis Lambert only the operations of the third-dimensional brain. Parsons says that Lambert was Balzac himself, and Taine, puzzling over Seraphita, declares that "His instrument was intuition, that dangerous and superior faculty by

which man imagines or discovers in an isolated fact all the possibilities of which it is capable, a kind of second sight proper to prophets," and Taine was justified in his criticism, for in Louis Lambert Balzac says (of himself), "Though naturally religious, he did not share in the minute observances of the Roman Church; his ideals were more particularly in sympathy with those of Saint Theresa, Fenelon, several of the fathers, and a few Saints, who would be treated in our day as Atheists or Heretics. He was unmoved during church services. Prayer, with him, proceeded from an impulse, a movement, an elevation of spirit that followed no regular course; in all things he gave himself up to nature, and would neither pray nor think at settled periods. He speaks of the link which connects the visible to the superior world; he acts, he sees, he feels through his inner body"—the fourth-dimensional intelligence. Again: "Humanity moves hither and thither in the natural world—the three-dimensional plane—which is fixed neither in its essence nor in its properties; the spiritual world is fixed in its essence." In the "Country Doctor," in his analysis of the character Fosseuse, Balzac proves that he was well acquainted with the fourth-dimensional intelligence, and that its manifestations, sometimes at least, are to be attrib-

uted to an unstable nervous organism. He says to Genestas: "Everything reacts upon the Fosseuse; if the weather is grey and somber she is sad, and weeps with the skies; she sings with the birds, grows calm and serene with the blue heavens; a delicate perfume is to her an inexhaustible pleasure. I have seen her the livelong day enjoying the fragrance of mignonette after one of those rainy mornings which draw out the soul of flowers. Sometimes I find the poor girl weeping at the scene our mountains give at sunset when innumerable munificent clouds cluster about their golden peaks. 'Why do you weep, my child?' I say to her. 'I do not know,' she answers; 'I am like one bewildered, looking up there. I don't know where I am, I see so far.'" At the age of twenty-two he tells Genestas that she is perishing—"a victim to the too-responsive fibers of an organism which is overstrung, or too delicate."

Of all men, however, who have written on the subject, Edward Carpenter is the most instructive—instructive because, unlike the majority of the illuminated, he possessed a keen, analytical mind, unusual literary ability, and the rare faculty of putting things clearly. His contact with the fourth-dimensional plane does not appear to have been as complete as many others—St. John, for

example—else the account of his experiences would have been as involved as that of the "Beloved Disciple." He says: "I really do not feel that I can tell you anything without falsifying and obscuring the matter;" and in this respect he agrees with those who have felt the illumination of the inner life. In speaking of the eastern and western types, he says: "The West seeks the individual consciousness—the enriched mind, ready perceptions and memories, individual hopes and fears, ambitions, loves, conquests—the self, the local self, in all its phases and forms—and surely doubts whether such a thing as a universal consciousness exists. The East seeks the universal consciousness, and in those cases where its quest succeeds, individual life and self thins away to a mere film, and are only the shadows cast by the glory revealed beyond." Again: "If I should be asked—as I have sometimes been asked—'What is the exact nature of this mood, this illuminated splendor, of which you speak?' I should have to reply that I can give no answer. All that I can say is that there seems to be a vision possible to man, as from some universal standpoint, free from the obscurity and localism which especially connect themselves with the passing clouds of desire, fear, and all ordinary thought and emotion, in that sense another

and separate faculty; and a vision always means a sense of light, so here is a sense of inward light, unconnected, of course, with the mortal eye, but bringing to the eye of the mind the impression that it sees, and by means of the medium which washes, as it were, the interior surfaces of all objects and things and persons—how can I express it? And yet this is most defective, for the sense is a sense that one is those objects and things and persons that one perceives, and (the whole universe)—a sense in which sight and touch and hearing are all fused in identity. Nor can the matter be understood without realizing that the whole faculty is deep and intimately rooted in the ultra-moral and emotional nature, and beyond the thought region of the brain." In view of what has been said about the necessity for assuming the existence of a fourth dimension, the following extract is of especial interest: "There is another idea which modern science has been familiarizing us with, and which is bringing us towards the same conception—that, namely, of the fourth dimension. The supposition that the actual world has four space dimensions, instead of three, makes many things conceivable which otherwise would be inconceivable. It makes it conceivable that apparently separate objects—*e. g.*, distinct people—are really physically

united; that things apparently sundered by enormous distances of space are really quite close together; that a person or object might pass in or out of a closed room without disturbance of wall, doors, or windows. If this fourth dimension were to become a factor of our consciousness it is obvious that we should have means of knowledge which, to the ordinary sense, would appear simply miraculous. There is much, apparently, to suggest that the consciousness attained by the Indian Gnanis in their degree, and by the hypnotic subjects in theirs, is of the fourth-dimensional order."

Tennyson, for whom the whole civilized world entertained the most profound respect, confirms the experience of the East in the following remarkable passage:

"A kind of walking trance I have frequently had, quite up from boyhood, when I have been all alone. This has often come upon me through *repeating my own name* to myself silently till, all at once, as it were, out of the intensity of the consciousness of individuality, the individuality itself seemed to dissolve and fade away into boundless being; and this not a confused state, but the clearest of the clearest, the surest of the surest, the weirdest of the weirdest, utterly beyond words, where death was an almost laughable impossibil-

ity, the loss of personality (if so it were) seemed no extinction, but the only true life."

J. William Lloyd declares that "With the intellectual illumination comes an indescribable moral elevation, and intense and exalted joyfulness, and, along with this, a sense of immortality; not merely a belief in a future life—that would be a small matter—but a consciousness that the life now being lived is eternal, death being seen as a trivial incident which does not affect its continuity. Further, there are annihilation of the sense of sin and an intellectual competency, not simply surpassing the old, but on a newer and higher plane."

But the reader's patience need not be further taxed in the matter of examples, for probably he has already thought of Emerson, of Pushkin, of Finney, of Jeffries, of Tyner, and of many, no doubt, known only to himself—of people in humble station, but whose lives are filled with the joy that passeth all understanding, of men and women who can truly say:

"There is no peace except where I am,
Though you have health, that which is called health—yet without me it is only the frail covering of disease;
Though you have love, yet if I be not around and between the lovers is their love only torment and unrest;
Though you have wealth, and friends and home—all these shall come and go—there is nothing stable or secure, which shall not be taken away."

Wordsworth called the consciousness of the inner ring, which is simply another dimension in space, the "Blessed mood;" Gautama called it "Nirvana," and Jesus the "Kingdom of God;" but these were merely terms by which they sought to express the inexpressible. Language, we know, fails us when we attempt to picture the experiences of those who have been initiated into the mysteries of the inner life. But why limit the dimensions of matter—if four, why not five; if five, why not infinite; and if infinite, then we have not even begun to dream of the potentiality of that little differentiated portion of energy which we call the "Ego."